David B. Cohen
Mayor

CITY OF NEWTON, MASSACHUSETTS

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Public Hearing Date:	September 25, 2006
Zoning and Planning Action Date:	November 27, 2006
Board of Aldermen Action Date:	December 4, 2006
90-Day Expiration Date:	December 24, 2006

TO: Ald. Brian E. Yates, Chairman, and
Members of the Zoning and Planning Committee
Planning and Development Board

FROM: Michael Kruse, Director of Planning and Development
Juris Alksnitis, Chief Zoning Code Official

SUBJECT: Petition # 333-97 of ALD. YATES proposing to amend the Newton Zoning Ordinance to require a special permit for the subdivision of property where such subdivision would reduce the level of service for traffic at the intersection of the subdivision with a public way by one level of service or more.

CC: Board of Aldermen
Mayor David B. Cohen
Philip B. Herr, Chair, Comprehensive Planning Advisory Committee

RECOMMENDATION: ***Request the Board of Survey to review, and if necessary, update and strengthen, traffic impact and management standards and criteria articulated in its Rules, section V.B.2.***

The purpose of this memorandum is to provide the Board of Aldermen, Planning and Development Board, and the public with technical information and planning analysis which may be useful in the decision making process of the Boards. The Planning Department's intention is to provide a balanced view of the issues with the information it has at the time of the public hearing. There may be other information presented at or after the public hearing that the Zoning and Planning Committee of the Board of Aldermen will consider its discussion at a subsequent Working Session.

I. BACKGROUND

This petition has been carried on the Board of Aldermen docket since it was filed some time ago in 1997. While the item has received informal discussion within the Zoning and Planning Committee from time to time, Ald. Brian Yates, the sponsor of this item has requested a public hearing which has been scheduled September 25, 2006. While the enclosed memorandum prepared by the Planning and Development Department provides an initial review and analysis of the petition, further study may be needed with regard to certain aspects.

II. EXISTING ORDINANCE AND PROPOSED AMENDMENT

The petition does not identify any specific sections of the Newton Zoning Ordinance ("Ordinance") for alteration or provide proposed text changes, which might serve to enact the contemplated special permit mechanism.

III. LEVEL OF SERVICE (LOS)

Level of service ("LOS") is a measure of the ability of an intersection to handle traffic flow, graded on a letter scale from "A" to "F", with "A" being the highest and "F" being the lowest. At LOS A, traffic flows freely, at LOS F, the traffic volume has exceeded the capacity of the roadway to handle it and there are no passing opportunities. LOS D is generally considered to be the lowest tolerable level of service for roadways. Roadway designs attempt to operate at LOS D in only the worst-case situations and preferably at higher levels of service.

The Transportation Research Board (TRB) has provided the following definitions for the respective levels of service:

- LOS A represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.
- LOS B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.
- LOS C is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.
- LOS D represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
- LOS E represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because even small increases in flow or minor perturbations within the traffic stream will cause breakdowns.

- LOS F is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount, which can traverse it, and queues begin to form. Operations within the queue are characterized by stopping and starting. Over and over, vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop. Level-of-service F is used to describe operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases once free of the queue, traffic may resume to normal conditions quite rapidly.

The City's Traffic Engineer advises that several data components are necessary in order to calculate LOS, including vehicle turning movement counts, turning lanes, and signal timing. While turning movement counts have been obtained, additional resources not currently available would be needed in order to input turning lanes and signal timing data into computer software capable of generating LOS outputs for particular intersections.

IV. EXISTING PROVISIONS

A. Newton Zoning Ordinance

Section 30-1, *"Definitions,"* of the Ordinance contains no definitions pertaining to subdivisions, traffic, or traffic related impacts. Section 30-24, *Special* Permits, describes the conditions upon which a special permit may be granted, and in paragraph 30-24(d) lists four criteria which must be satisfied, including the following in (d)(4):

"Access to the site over streets is appropriate for the type(s) and number(s) of vehicles involved."

As a result, each petition for special permit must meet a traffic related criterion to the satisfaction of the Board of Aldermen (Board). It has been standard practice of the Board and of the City to require traffic studies and peer reviews of such studies for major projects needing special permits and which have significant traffic implications. However, this Zoning Ordinance-based provision does not affect subdivisions, which are separately regulated by Massachusetts statutes known as the "Subdivision Control Law" as articulated in MGL C41, Sections 81K-81GG, and are administered by the Planning Board acting as a Board of Survey.

B. Subdivision Control Law

MGL c.41, Sections 81K-81GG authorize the Planning Board acting as a Board of Survey to execute and administer the purposes of this statute. As part of this authority, the Board of Survey is empowered to ensure that subdivisions result in safe and efficient traffic. This aspect is further articulated within the Rules and Regulations of the Board of Survey as discussed below in IV.C., below. It is further noted that the Law Department indicates that it is unclear whether this statute provides any authority for the Board of Aldermen to act in the area of subdivision control. However, Law Department staff is currently looking into this issue and will provide guidance at a subsequent time.

C. Rules and Regulations of the Planning Board Acting as a Board of Survey, 1984 (Rules)

These Rules apply to the submittal, review and approval of subdivision plans governed by Subdivision Control Law. However, there is also a division of land not requiring formal

approval by the Board of Survey, which are known as "approval not required plans", i.e. "A.N.R. plans". Such plans generally involve the further subdivision of property already having frontage on existing approved streets and receive review by the City Engineer. Subdivision plans requiring approval by the Planning Board acting as a Board of Survey must meet certain plan submittal requirements and as well as standards established in the Rules, *Section V. Design Standards.* In particular, Subsection V.2. *"Access From and to Adjacent Ways and Land"*, subparagraph (b) states:

b. No proposed subdivision will be approved unless, as submitted or as modified, the proposed subdivision will not (1) create dangerous traffic conditions in the public and private ways adjacent to the proposed subdivision, (2) create inadequate and dangerous access to the subdivision through such adjacent public and private ways, and (3) utilize public and private ways adjacent to the proposed subdivision which already contain dangerous traffic conditions, and which would be further aggravated by the proposed subdivision and thereby pose hazards to either the residents of the proposed subdivision, or those using or residing next to those existing public ways. The Planning Board will determine whether the aforementioned dangerous traffic conditions or inadequate access are applicable by utilizing recent traffic data and current traffic control and planning standards.

The Law Department has advised that the Board of Survey has the clear authority to promulgate subdivision control requirements which ensure safe and efficient traffic in ways and intersections directly adjacent to a proposed subdivision, and may clarify or update such requirements as needed from time to time.

Finally, it is also noted that the Rules, Section II. Administration, paragraph K provides that the Board of Survey "..shall attempt to hold joint hearings and working sessions with the Board of Aldermen acting as a special permit granting authority for developments which fall within the jurisdiction of both boards." The text goes on to mention "cluster subdivisions" and certain residential configurations as examples prompting such coordinated action.

V SUMMARY OF RESEARCH

In spring 2004, the Planning and Development Board considered whether to undertake development of a new ordinance relating traffic to development and subdivisions. Following extended discussions, the Board concluded that the existing language within Board of Survey Regulations, subsection V.2 (see above) provided a necessary measure of control. David Banash, Chairman of the Ordinance Subcommittee of the Planning and Development Board in his memorandum dated March 10, 2004, titled *Traffic Standards in Non-Residential and Large Residential Development* while noting that LOS is used in various communities, also points out comments by others that the "..number of vehicle trips generated or the percentage that development increases traffic on the street would be more precise and useful."

Research to date suggests that the mechanism contemplated in the subject petition, while well intended, is unlikely to be of significant help in the management of traffic impacts generated by new subdivisions. Review of definitive subdivision plans reviewed and approved by the Board of Survey during the last five years indicates only 5 cases as follows:

Location	#Lots	Zoning
Atkinson St.	2	SF
Ivy Drive	2	SF
Kesseler Way	10	SF
Pine Meadow Drive	4	SF
Pine Meadow Extension	3	SF

In addition, the City Engineer, acting on behalf of the Board of Survey reviews approximately 8-10 "approval not required" plans per year. As noted previously, these divisions of land typically involve the further division of property with frontage on existing ways.

From approximately 1991-2004, the Board of Aldermen approved 15 special permits for rear lot subdivisions containing: 10 - SF homes, 4 - 2F homes, and 1 site with 6 attached dwelling units. No cases were approved in 2005, and one case is being proposed at this time pursuant to the new rear lot subdivision Ordinance X-123, adopted December 6, 2004. In each of the above-approved cases the Board had opportunity to consider any traffic impacts through the site plan review and special permit process.

During the Comprehensive Plan preparation process Philip Herr, Chairman of the Comprehensive Plan Advisory Committee (CPAC), proposed a mechanism to link developable gross floor area with peak hour vehicle trip generation limits per 10,000 sq. ft. of lot area. (P. Herr & Associates memo dated May 27, 2003, last revised June 30, 2004, titled *Performance Zoning for Trip Generation Limits*). Certain trip generation levels would be allowed as of right, while higher rates would require a finding by the Board of Aldermen that the proposed levels meet certain traffic operation and safety standards to be incorporated as future amendments within the Ordinance, all subject to special permit and any applicable traffic mitigation requirements. This mechanism is mentioned in the *Draft Newton Comprehensive Plan*, dated November 2, 2005 within the *Transportation and Mobility* component. While the Planning and Development Board at one time considered further studying this approach, it has elected to focus on other issues at this time.

Reid Ewing, a noted expert on transportation and land use in his text, Transportation and Land Use Innovations: When You Can't Pave Your Way out of Congestion, APA (American Planning Association), 1997, suggests an approach shifting emphasis away from attempting to maximize LOS and traffic speed at individual intersections. Instead, Ewing favors a broader strategy seeking to manage vehicle hours of travel (VHT) per capita traveled within a region. Ewing goes on to suggest that public dollars are better spent on strategic improvements designed to maintain a certain area wide LOS rather than a minimum LOS, such as a "D" rating at every intersection.

Finally, it may also be noted that earlier this year Governor Tim Kaine of Virginia announced a statewide Transportation Initiative, which proposed a package of technical, funding, and planning approaches to better manage growth and traffic. The package included proposed bills, currently under consideration by the Virginia legislature, to require a traffic impact study for every rezoning request and to empower local governments to decline rezoning requests, which might overwhelm the local transportation infrastructure.

VI. ANALYSIS

The subject Petition #337-97 seeks to amend the Newton Zoning Ordinance by inserting a linkage mechanism between subdivision approval and traffic impact. While no specific amendatory text is provided, the intent is to trigger the special permit requirement whenever a subdivision development is shown to degrade the LOS of a nearby intersection by one level. At present, the Board of Survey has statutory authority to review and approve subdivisions, which fall under the Subdivision Control statutes. The Board of Aldermen have jurisdiction with respect to subdivisions in certain instances only, such as projects seeking "cluster plan" approval under Section 30-15(k), *Open Space Preservation Development,* and projects seeking rear lot subdivision approval under Section 30-15(r), *Requirements for Creation of Rear Lots in Residential Districts.* In addition, the Board of Aldermen has authority to adjust lot area and frontage up to 5% pursuant to Section 30-26(c) and (d). It is noted that "The Terraces" development, which is accessed from Langley Road, was approved by special permit granted pursuant to Section 3-15(k), and involved review of traffic impacts.

The City Traffic Engineer has advised that any subdivision generating less than one vehicle per minute in the peak hour, or 60 vehicles, would not create a measurable or adverse traffic impact. Furthermore, a rule of thumb indicates that vehicle trips generated in the peak hour are approximately half the corresponding number of dwelling units. As a result, the City Traffic Engineer believes that subdivisions having 50 or fewer dwelling units, i.e. generating approximately 25 vehicle trips per hour, are unlikely to have any effect on the LOS of a nearby intersection. Consequently, only subdivisions presenting quite large-scale development within the City would affect LOS. Given the general lack of large developable tracts of land within Newton, the proposed mechanism would not be needed, unless significant development were to be proposed on any of the remaining golf courses, which contain the remaining large land holdings in the City.

Existing statutes empower the Board of Survey as the primary review and approval agency for subdivisions and the existing Rules establish certain traffic related criteria and standards which are applied by the Board in its review. Creating a LOS/special permit link as proposed, would insert the Board of Aldermen into subdivision control procedures, adding an extensive submittal and review layer to the existing process. Given that Newton is a mature, developed community and has experienced a very low rate of subdivision plan submittals over the past five years, this raises a question as to the need for such a mechanism. In addition, as noted by the Law Department, it is not clear that the subdivision control statute authorizes a role for the Board of Aldermen in this regard. However, the Board of Aldermen may wish to refer a request to the Board of Survey to review its traffic standards and criteria, and if necessary, strengthen its Rules as to traffic impact and management.

It should also be noted that the City through its Comprehensive Plan preparation process has considered growth, development, and traffic impact issues at some length. The *Draft Newton Comprehensive Plan* provides extensive analysis and recommendations in the section titled *Transportation and Mobility.* In particular, the strategy subsection titled "*Establish Transport-Sensitive Design Guidance for Development*", paragraph C. states:

> ***C. Systematic limits on traffic impacts onto nearby streets need to be made as much a part of the usual rules of development as lot area and floor area controls are now.***

Accordingly, adopt land use controls assuring that development intensity will be consistent with the capacity and characteristics of the transportation infrastructure as it is planned to be. For example:

(1) ***Make rezoning or permit approval subject to meeting explicit transportation performance standards based upon, among other things, roadway capacity and public transportation service as proposed in this Plan..***

(2) ***Above some trip-generation threshold, require that project approvals are to be based on an approved Transportation Access Plan, supported by thorough technical analysis.***

This approach would establish an "as of right" trip generation level, which, if exceeded, would necessitate a special permit. While not be specifically linked to subdivision control, it would operate in a more comprehensive manner across a range of residential and non-residential uses, and include future expanded traffic safety and operations requirements to be articulated within the Ordinance.

Finally, further thought is also needed to ascertain the most useful measure of traffic intensity and impact. As noted by the City Traffic Engineer and Philip Herr, traffic indicators other than LOS may be more appropriate. In addition, R. Ewing points out that LOS is oriented to increasing traffic speed, which in turn has other effects, such as facilitating sprawl. Moreover, R. Ewing suggests a more regional traffic management approach utilizing VHT/capita and allowing more traffic (and congestion) in certain central areas implying a lower LOS rating, while requiring lesser traffic elsewhere implying a higher LOS rating.

VII. SUMMARY AND RECOMMENDATIONS

Existing statutes establish the Board of Survey as the primary review and approval agency for subdivisions with the power to adopt applicable Rules establishing certain traffic related standards and criteria, which are applied by the Board in its formal subdivision review. Inserting the Board of Aldermen into subdivision control procedures through a special permit requirement would add an extensive submittal and review layer to the existing process. In addition, as noted by the Law Department, it is not clear that the subdivision control statute authorizes a role for the Board of Aldermen in this regard.

Moreover, the Board of Aldermen already has the authority, and has established certain practices requiring traffic impact studies as well as peer review of such studies in situations involving major projects triggering site plan review and special permit procedures. The Board may elect to exercise this practice at its discretion with regard "cluster development" or "rear lot" projects where site plan approval and special permit are already required.

In addition, questions have been raised as to the utility of a LOS/special permit mechanism both as to the low traffic generation potential of small developments as well as to whether measures other than LOS may be more applicable or practical.

As a result, it makes sense to leave the subdivision control process and traffic impact considerations in the domain of the authorized agency, the Board of Survey. However, the Board

of Aldermen may wish to refer a request to the Board of Survey to review, and if necessary, update and strengthen its traffic related standards and criteria in the context of the issues discussed above.

Finally, the Board of Aldermen may wish to further explore the traffic/zoning linkage mechanisms raised in the *Draft Newton Comprehensive Plan.*

RECOMMENDATION: ***Request the Board of Survey to review, and if necessary, update and strengthen, traffic impact and management standards and criteria articulated in its Rules, section V.B.2.***

References

- Rules and Regulations of the Planning Board Acting as a Board of Survey, 1984
- Transportation and Land Use Innovations: When You Can't Pave Your Way Out of Congestion, Reid Ewing, American Planning Association, 1997.
- Memorandum: *Traffic Standards in Non-Residential and Large Residential Development*, David Banash, Chairman, Ordinance Subcommittee, Planning and Development Board, March 10, 204
- Memorandum: *Performance Zoning for Trip Generation Limits,* Philip B. Herr Associates, last rev. June 30, 2004.
- *Draft Newton Comprehensive Plan*, Comprehensive Plan Advisory Committee, November 2, 2005
- "Kaine Transportation Plan", Gov. Tim Kaine website, www.governor.virginia.gov/Initiatives